

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) In a computer network, a method of automatically and transparently handling WebDAV server and file access requests, the method comprising:

maintaining at an I/O manager a predetermined, ~~stored~~ ~~a~~-priority order that indicates which of a plurality of redirectors has precedence to handle a WebDAV I/O request, ~~in the event that two or more~~ wherein a plurality of suitably configured redirectors respond to a the WebDAV I/O request, each redirector being equally capable of redirecting the received WebDAV ~~indicating a configuration suitable for handling the~~ I/O request;

receiving at the I/O manager a WebDAV I/O request initiated from an application program, wherein the request indicates a path and filename of a remote file accessible via WebDAV;

polling available redirectors to determine which redirectors are configured to handle the application program's WebDAV I/O file request, each redirector suitably configured to handle the I/O request including appropriate functionality for receiving and redirecting WebDAV file requests to corresponding WebDAV server computer systems that store the remote files;

receiving responses from a plurality of suitably configured redirectors, each suitably configured redirector being equally capable of redirecting the received WebDAV I/O file request;

determining from the stored priority order which of the plurality of suitably configured redirectors has precedence to handle the WebDAV I/O request;

based on the determination, requesting a local file system of the redirector determined to have precedence to create the file in response to the WebDAV I/O request, downloading the file to a local cache of the redirector's file system, and returning a file handle corresponding to the file in the local cache to the application program;

providing access to the file in the local cache of the file system via the file handle;
and

receiving a request to close the file via the file handle, and when received,
uploading the file from the local cache of the file system to the WebDAV server.

2. (Original) The method of claim 1 wherein receiving an I/O request initiated from an application program comprises, receiving a Universal Resource Identifier corresponding to a file on the WebDAV server.

3. (Original) The method of claim 1 wherein receiving an I/O request initiated from an application program comprises, receiving a filename and an identifier previously mapped to a share on the WebDAV server.

4. (Previously Presented) The method of claim 1 wherein polling available redirectors to determine which redirectors are configured to handle the application program's I/O request comprises, issuing an HTTP OPTIONS request, and evaluating a response therefrom.

5. (Previously Presented) The method of claim 1 wherein polling available redirectors to determine which redirectors are configured to handle the application program's I/O request comprises, issuing a WebDAV PROPFIND request directed to a share on the WebDAV server, and evaluating a response therefrom.

6. (Original) The method of claim 5 wherein the WebDAV server returns property information in response to the WebDAV PROPFIND request directed to the share, and further comprising, maintaining the property information in a local data structure.

7. (Previously Presented) The method of claim 1 wherein polling available redirectors to determine which redirectors are configured to handle the application program's I/O request comprises, issuing a WebDAV PROPFIND request directed to the file on the WebDAV server, and evaluating a response therefrom.

8. (Original) The method of claim 7 wherein the WebDAV server returns property information in response to the WebDAV PROPFIND request directed to the file, and further comprising, maintaining the property information in a local data structure.

9. (Previously Presented) The method of claim 1 wherein polling available redirectors to determine which redirectors are configured to handle the application program's I/O request, comprises:

a) issuing an HTTP OPTIONS request, evaluating a corresponding response, and determining that the server is a WebDAV server;

b) issuing a WebDAV PROPFIND request directed to a share on the WebDAV server, evaluating a corresponding response, and determining that the share exists on the WebDAV server, the response including share property information; and

c) issuing a WebDAV PROPFIND request directed to the file, evaluating a corresponding response, and determining that the file exists, the response including file property information.

10. (Original) The method of claim 9 further comprising, maintaining the share property information and the file property information in at least one local data structure.

11. (Previously Presented) The method of claim 1 wherein polling available redirectors to determine which redirectors are configured to handle the application program's I/O request, and further comprising, communicating with at least one other local component to indicate that at least this request can be handled.

12. (Previously Presented) The method of claim 1 further comprising, determining that the file is encrypted on the WebDAV server, and wherein downloading the file to a local cache of the file system comprises, communicating with the file system to create an image of the file in the local cache that is also encrypted.

13. (Original) The method of claim 12 further comprising, communicating with the file system to open the image of the file such that the file system will transparently decrypt file data on read requests and will transparently encrypt file data on write requests to the file.

14. (Previously Presented) The method of claim 12 wherein uploading the file from the local cache of the file system to the WebDAV server comprises, communicating with the file system to read data from the local image of the file such that the file will be uploaded as the encrypted image thereof.

15. (Previously Presented) A recordable computer-readable storage medium having computer-executable instructions for performing the method of claim 1.

16. (Currently Amended) A computer-implemented method of automatically and transparently handling WebDAV server and file access requests, the method comprising:

maintaining at a local application programming interface layer a predetermined, stored ~~a~~-priority order that indicates which of a plurality of redirectors has precedence to handle a WebDAV I/O request, ~~in the event that two or more wherein a plurality of~~ suitably configured redirectors respond to a the WebDAV I/O request, each redirector being equally capable of redirecting the received WebDAV ~~indicating a configuration suitable for handling the I/O request~~;

receiving at a the local application programming interface layer a WebDav application I/O request comprising a WebDAV Uniform Resource Identifier (URI) indicating a path and filename of a remote file accessible via WebDAV;

polling available redirectors to determine which redirectors are configured to handle the WebDAV URI, each redirector suitably configured to handle the I/O request including appropriate functionality for receiving and redirecting WebDAV URI requests to corresponding WebDAV server computer systems that store the remote files;

receiving responses from a plurality of suitably configured redirectors, each suitably configured redirector being equally capable of redirecting the received WebDAV URI request;

determining from the stored priority order which of the plurality of responding redirectors has precedence to handle the WebDAV I/O request ; and

if the specified share and file are accessible, handling the request, including, based on the determination, requesting a local file system of the redirector determined to have precedence to create the file in response to the WebDAV I/O request, downloading the file to a local cache of the redirector's file system, and returning a file handle corresponding to the file in the local cache to the application program.

17. (Original) The method of claim 16 wherein the application request includes the Universal Resource Identifier.

18. (Original) The method of claim 16 wherein the application request includes an identifier that has been previously mapped to at least part of the Universal Resource Identifier.

19-20. (Cancelled).

21. (Original) The method of claim 16 wherein the application request comprises an I/O request directed to a file, and wherein handling the request comprises creating a local file corresponding to the I/O request.

22. (Original) The method of claim 21 wherein handling the request further comprises, downloading at least some file data from the WebDAV server to the local file.

23. (Original) The method of claim 21 wherein handling the request further comprises, returning a file handle corresponding to the local file to the application.

24. (Original) The method of claim 16 wherein the application request comprises a networking request to browse a network share on the WebDAV server, and wherein handling the request includes enumerating information of the network share.

25. (Cancelled)

26. (Previously Presented) The method of claim 16 wherein the application program's request indicates a share on the WebDAV server, and further comprising, issuing a WebDAV PROPFIND request directed to the share on the WebDAV server.

27. (Original) The method of claim 26 wherein the application program's request further indicates a file on the share on the WebDAV server, and further comprising, issuing a WebDAV PROPFIND request directed to the file.

28. (Previously Presented) The method of claim 16 wherein the application request comprises an I/O request directed to an encrypted file, and further comprising, automatically

decrypting the data locally when downloading the encrypted file from the WebDAV server and automatically encrypting the data locally when uploading the encrypted file to the WebDAV server.

29. (Original) The method of claim 16 wherein the application request comprises an I/O request directed to a file that is encrypted on the WebDAV server, and wherein handling the request comprises, creating a local file corresponding to the I/O request, and downloading an image of the file on the WebDAV server to the local file, wherein the local file is written by a local file system such that the image corresponds to the encrypted image on the WebDAV server.

30. (Original) The method of claim 29 further comprising, communicating with the file system to open the local file such that the file system will transparently decrypt file data read on read requests and will transparently encrypt file data written on write requests.

31. (Original) The method of claim 30 further comprising, detecting a request to close the local file, closing the local file, communicating with the files system to open the local file such that the file will not be decrypted when read, and uploading the file to the WebDAV server as an encrypted file.

32. (Previously Presented) A recordable computer-readable storage medium having computer-executable instructions for performing the method of claim 16.

33. (Currently Amended) In a computer network, a system for automatically and transparently handling WebDAV server and file access requests, the system comprising:

an application program that issues WebDAV-related requests, including at least one request having a WebDAV Uniform Resource Identifier (URI) corresponding to path and filename of a remote file stored on a WebDAV server;

a WebDAV redirector, the WebDAV redirector configured to respond to polls used to determine which redirectors are configured to handle the application's WebDAV-related request, each redirector suitably configured to handle the I/O request including appropriate functionality for receiving and redirecting WebDAV file requests to corresponding WebDAV server computer systems that store the remote files;

an I/O manager that maintains a predetermined, stored a-priority order that indicates which of a plurality of redirectors has precedence to handle a WebDAV I/O request, ~~in the event that two or more wherein a plurality of suitably configured redirectors respond to a~~ the WebDAV I/O request, each redirector being equally capable of redirecting the received WebDAV ~~indicating a configuration suitable for handling the~~ I/O request, and that receives responses from a plurality of suitably configured redirectors, each suitably configured redirector being equally capable of redirecting the received WebDAV I/O file request; and

determining from the stored priority order which of the plurality of suitably configured redirectors has precedence to handle the WebDAV I/O request and indicating that the WebDAV redirector locally handling each request corresponding to the WebDAV server can be handled locally and was determined to have precedence to create the file in response to the WebDAV I/O request, or communicating with the WebDAV server to handle requests that cannot be handled locally.

34. (Original) The system of claim 33 wherein the identifier corresponding to a WebDAV server issued by the application comprises a Universal Resource Identifier.

35. (Original) The system of claim 33 wherein the identifier corresponding to a WebDAV server issued by the application comprises an identifier previously mapped to a share on the WebDAV server.

36. (Previously Presented) The system of claim 33 wherein the WebDAV redirector receives requests from the application via an application programming interface.

37. (Previously Presented) The system of claim 33 wherein the application program issues I/O requests directed to a WebDAV file, and wherein the WebDAV redirector receives the I/O requests from a manager component.

38. (Previously Presented) The system of claim 33 wherein the application program issues I/O requests directed to a WebDAV file, and wherein the WebDAV redirector:

- a) creates a local representation of the file;
- b) determines whether the file exists on the WebDAV server, and if so, downloads at least some of the data from the WebDAV server file to the local representation of the file;
- c) returns a file handle corresponding to the local representation of the file to the application program;
- d) receives I/O read and write requests associated with the file handle and handles the I/O read and write requests via the local representation of the file; and
- e) receives an I/O close request associated with the file handle, and handles the I/O close request by closing the local representation of the file and uploading at least part of the local representation of the file to the WebDAV server.

39. (Previously Presented) The system of claim 38 wherein the WebDAV file is encrypted, and wherein WebDAV redirector creates the local representation of the file by:

- a) requesting the file system to create a local file that is opened such that transparent encryption and decryption are not enabled therefor,
- b) downloading at least some of the encrypted file data by requesting the file system to write to the local file without translation thereof, and

c) requesting the file system to close the local file.

40. (Previously Presented) The system of claim 39 wherein the WebDAV redirector handles I/O read and write requests from the application by requesting the file system to reopen the local file such that reads therefrom are decrypted and writes thereto are encrypted.

41. (Previously Presented) The system of claim 40 wherein when the WebDAV redirector handles the I/O close request, and before uploading the file, the WebDAV redirector closes the local representation of the file, and reopens the local file by requesting the file system to open the file such that reads therefrom are not decrypted.

42. (New) The method of claim 1, wherein the priority order is based on server type.

43. (New) The method of claim 42, wherein a different priority order is stored for each server type.

44. (New) The method of claim 1, further comprising:

determining that the redirector determined to have precedence is configured to handle all similar WebDAV I/O requests to a network share; and

bypassing any redirector polling for subsequent requests directed to the network share.